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RIVER USE MANAGEMENT PLAN

OZARK RIVERWAYS

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RIVER USE MANAGEMENT PLAN
OZARK NATIONAL SCENIC RIVERWAYS

May 1989

Recommended _____ 11/4/88
Superintendent — Date
Ozark N. S. R.

Approved _____ 5/11/89
Regional Director — Date
Midwest Region

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LIST OF PREPARERS

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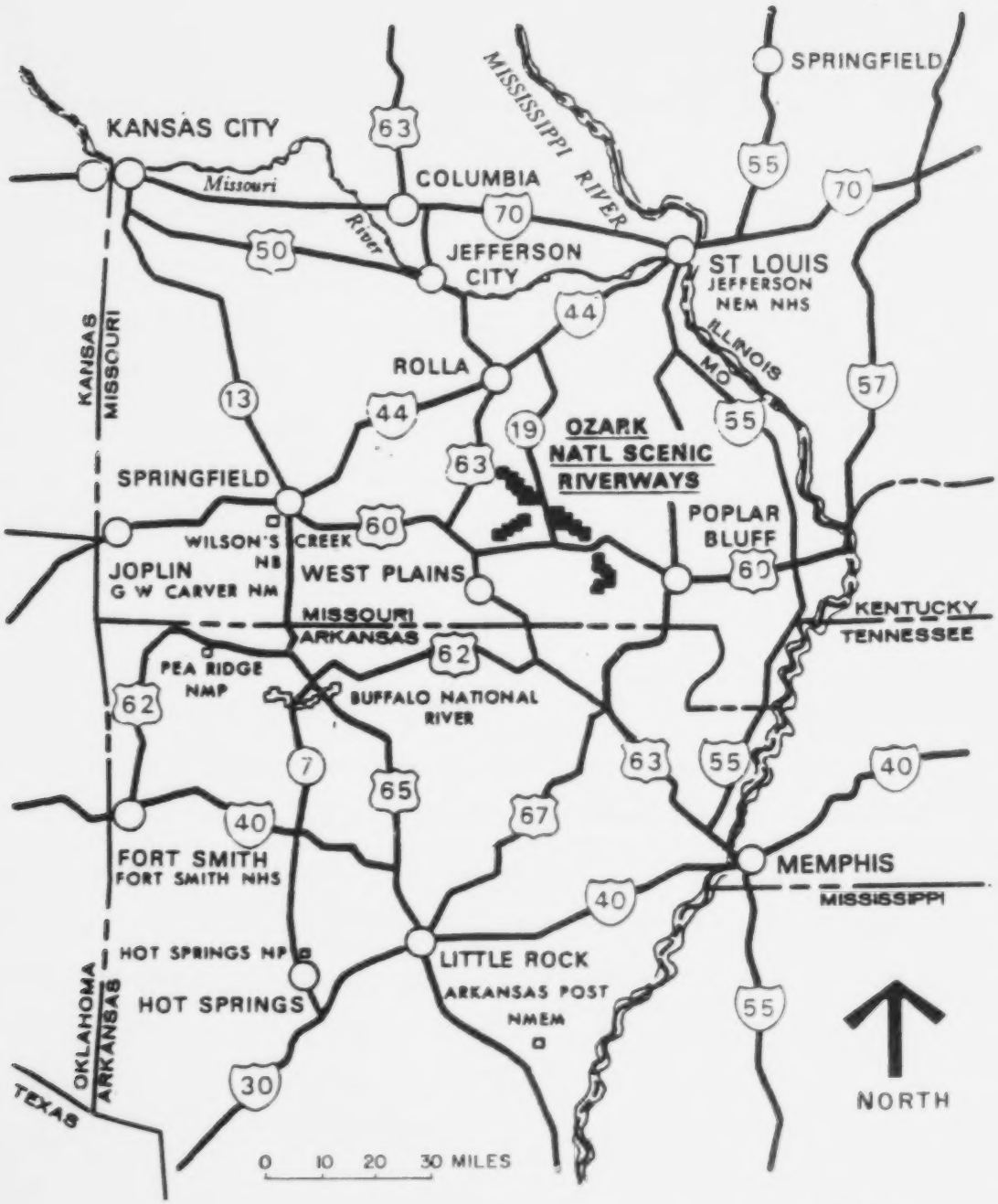


OZARK RIVERWAYS

INTRODUCTION

Prologue

The clarity and purity of the water, the clean air, the forests and glades, the river bluffs, the springs and other features make Ozark National Scenic Riverways not only nationally significant but different from any other rivers in the Ozarks. It is a special place to visit. An important aspect of this quality is variety, not only in the landscape, geological features, and diverse plant and animal life, but also in the broad ranging character of the rivers themselves, from fast headwaters rushing by steep bluffs to the broad, tranquil expanses of the lower reaches. Unique scenic qualities and the natural features exemplified by the former Missouri state parks of Round Spring, Alley Spring and Big Spring were additional reasons for establishing this park as the first national scenic riverways in the country.

The visitors who enjoy the Riverways include urban families experiencing the rivers for the first time, long-term residents carrying on their traditional uses, individuals and groups seeking a satisfying canoeing experience or a few days of solitude, and large groups of persons from churches, schools, clubs, corporations, and civic organizations. Ozark National Scenic Riverways serves people of many ages, backgrounds, interests and needs. As the rivers have become increasingly popular, however, conflicts have arisen and the very qualities that brought the visitors to the rivers in the first place have become threatened.

Planning Summary

In 1964 Congress established Ozark National Scenic Riverways for the following purposes:

". . . conserving and interpreting unique scenic and other natural values and objects of historic interest, including preservation of portions of the Current River and the Jacks Fork River in Missouri as free-flowing streams, preservation of springs and caves, management of wildlife, and provisions for use and enjoyment of the outdoor recreation resources thereof by the people of the United States, . . ." (P.L. 88-492).

Since that time, recreational use of the river has steadily increased as a result of publicity about the area, qualities of the area and the addition of improved facilities. Principal river use activities include canoeing, swimming, tubing, motorboating, fishing, and to a lesser extent, uses such as skin diving. Of these, canoeing has shown the most dramatic increase in popularity over the last 15 years. The most rapid increase in canoeing use occurred between 1972, when approximately 60,000 canoes floated the river, and 1979 when nearly 148,000 canoes were launched. Other uses have also increased significantly although not as dramatically as in the case of canoeing. This increasing popularity has created problems associated with greater competition for the use of a finite resource base. Also, resource damage due to inappropriate or intensive use has increased in some areas. These include crowding and increased conflicts between river users, increasing needs to protect water quality and provide sanitation facilities, proliferation of litter and congestion at river accesses and campgrounds.

A field research program designed to systematically explore the complexities of the river use situation began in 1972 and has continued to the present time. The decision to institute a comprehensive river research effort was based on the knowledge that: (1) Riverways' ecosystems were complex; (2) the Riverways as a management unit was relatively new; and (3) individual managers and specialists transfer, thus, a repository of information was needed for management continuity. The data derived from this program has proven invaluable in formulating management plans and in the decision-making process.

In 1980-81 two major planning documents, the Environmental Assessment/General Management Plan and the Draft General Management Plan/Development Concept Plan were prepared and released for public review. These documents addressed river recreation, land recreation, general development, cultural resources, natural resources, wilderness and trailrides. The impacts of management and development proposals and alternatives on the environment, visitors, and management were also assessed.

During the subsequent preparation and approval of the General Management Plan, a decision was made to delete specific river management proposals due to the potential effects of litigation regarding the authority of the National Park Service to control commercial canoe rental operations within the boundaries of Ozark National Scenic Riverways. This litigation continued for 3 years, culminating in a 1983 decision from the U.S. Eighth Circuit Court of Appeals that clearly established the authority of the Federal Government to control commercial canoe operations.

Although additional litigation was initiated in 1984 and continued into 1985, development of a River Use Management Plan was scheduled for completion in 1986. In November 1985 the Draft River Use Management Plan and Environmental Assessment was released for public review and comment. Over 1,250 copies of the draft were distributed to various public agencies, organizations and individuals. The plan was also presented at seven public meetings throughout Missouri.

In addition to comments received at the public meetings, 1,680 mail responses were received and analyzed for consideration in preparing the plan that follows. Due to the diversity of the issues and public interests, there were no public consenses on any of the major issues addressed in the draft plan. On several of the issues, responses included comments supporting a wide range of extremes on either side of the preferred alternative. Some respondents addressed numerous issues while others addressed only one or a few.

River Use Summary

Statistics on river use and trends have been collected since 1972. Analysis of these data indicates that virtually all forms of use have increased substantially since 1972; however canoe use has increased at a much more rapid rate than others. Use of the river is largely determined by weather and water conditions and to some extent by the type of use.

Canoeing is the most intensive form of river use and the number of participants from 1972 to 1979 increased at a faster rate than general visitation (Appendix B). Since 1979, canoe use has leveled off at approximately 297,000 canoeists annually. This leveling off was independent of the number of commercial rental canoes

available and suggests that a "social carrying capacity" had been reached as a result of crowding. This conclusion is supported by studies of crowding perceptions.

Canoeists perceptions of crowding, a subject of research studies from 1972 to 1984, have increased on the rivers along with use levels. From 1972 to 1979, crowding perceptions increased as the number of canoes available for rent increased and reached a peak in 1979 when more than 3,000 commercial rentals were available. In 1984, following a favorable court decision upholding National Park Service's authority to control canoe rental operations in the park, a canoe concession management program was initiated which limited concessioner put-in and take-out locations. The perception of crowding dropped substantially (Table 1), supporting the National Park Service's premise that a combination of distribution of use and control of canoe numbers can reduce the perception of crowding and enhance the quality of the river-experience, without significantly altering the annual total number of canoeists.

Table 1.

Crowding Perceptions of Canoeists
at Ozark National Scenic Riverways, 1972-1984
(Marnell et. al., 1978; Chilman, 1979; Chilman & Everson, 1985)

Perceived crowding	More than expected	More than desired	Felt to be a problem
1972	23%	27%	15%
1977	32%	51%	34%
1979	39%	61%	37%
1984	34%	38%	8%

Perceptions of crowding data were also correlated with canoe densities during the periods of study to establish this relationship. Results show that increasing

complaints and unacceptable crowding occurred when sustained daily use exceeded approximately 70 canoes per mile (Appendix C).

Motorboating has always been a traditional use of the rivers. Prior to 1975, this use was relatively low with about 3,600 boat days recorded in 1974. Following the appearance of outboard jet units which increased boat maneuverability and reduced the need for boat operators to have a considerable knowledge of river conditions, motorboat use increased steadily to nearly 12,000 boat days in 1980 and slightly more than 13,500 in 1984. An increase in the average horsepower of outboard motors used on the river was also observed during this period and is reflected in the outboard motor registration data for Carter, Shannon, and Reynolds Counties (Appendix D).

Increasing motorboat use and horsepower has become an important concern and issue with both park management and various river user groups. During the review of the draft General Management Plan, four out of five respondents favored limitations on horsepower of motorboats used in the riverways. In 1984, canoeists responding to a river use survey supported restrictions on motor size or zoning of use more than any other management action suggested in the survey. The potential for accidents resulting from increased speeds and size of motorboats presently being used in close proximity to canoeists, swimmers, and tubers is a growing safety concern of park management and these user groups.

The composition and seasonal aspects of river use varies between river districts and has been well documented by studies carried out since 1972. Data for 1980 is presented in Appendix E. Canoes are the predominant watercraft (92%) in the park as a whole; however, the composition varies somewhat between river districts and seasons. Motorboat use increases progressively downstream as the rivers become

larger and more suitable for such use. There is also a seasonal trend evident with the proportion of motorboat use increasing during the spring and fall and canoe use heaviest during the May-September period. Much of the motorboat traffic can be attributed to pleasure boating and fishing by local residents, while canoe use in the summer is predominantly from nonlocal park visitors.

Present regulations prohibit the use of inboard jet motors and air boats in the riverways. This is defined to include jet skis. Outboard jet units, which convert normal outboard motors to propel a jet stream, were not included in past regulations.

Most of the camping at Ozark occurs at the developed campsites at Akers, Pulltite, Round Spring, Alley Spring, Two Rivers, and Big Spring. Undesignated gravel bar camping along the river is allowed, and there are also more than 40 primitive campsites along the Current and Jacks Fork Rivers that provide limited facility riverbank camping.

In 1974 there were an estimated 25,000 gravel bar camper-nights, involving approximately 15% of river floaters. In 1984, there were an estimated 27,000 gravel bar camper-nights, representing 9% of the floaters. Canoe rental data show that there was a higher percentage of 1-day floats in 1984 than in 1974.

Sanitation and litter problems have grown with increased river use and were well documented in the 1978 National Park Service report on river recreation research at Ozark.

The existing litter program involves summer cleanup crews, an annual cleanup day involving NPS personnel and concessioners, a Statewide cleanup effort, and periodic cleanup projects undertaken by volunteers who are concerned about the rivers.

Litter awareness decals are applied to all concessioner rental canoes. Litter problems are also mentioned in radio public service announcements. In spite of these measures, litter continues to be a problem, generally in proportion to visitor numbers, which demands a significant amount of maintenance, enforcement and funds. The litter problem is further aggravated by floods which distribute refuse over the entire floodplain.

Human waste problems are related to numerous canoeists relieving themselves on gravel bars and river banks. Serious aesthetic problems occur along heavily used sections of the rivers between developed areas. Vault toilets can be and are provided at reasonable intervals, but their use is dependent on the conscientiousness of river users. On at least one occasion, a degradation of water quality did occur with a combination of high density recreational use and low river flows attributable to a summer drought condition. Appendix F shows the relationship of floater use and bacteria levels at Round Spring access on Current River during the summer of 1980. Although this condition is not expected to be of a recurring nature, these data can be used as another indicator of river recreational carrying capacity.

The riverways provides a wide range of unstructured outdoor recreational opportunities to river users. In addition to canoeing and motorboating, other activities include fishing, tubing, camping, caving, hiking, swimming, skin diving, sight-seeing, nature study, hunting, and picnicking. Most of this use is focused directly on the rivers, with other land-based activities frequently associated with river use.

While some localized areas of resource impact are evident and there are some conflicts between user groups in heavily used areas, overall the Riverways has

offered satisfying experiences to most persons seeking solitude, to families, and to persons preferring the excitement and comradeship of group recreational activities without serious resource degradation.

Tubing is a river recreation activity that has greatly increased in recent years, exceeding a thousand participants on some Saturday afternoons in 1984 in the Big Spring area. There is at present no limit on the number of tubes available for rent by the licensed operators.

The nature of the conflicts created by increased tubing is that tubes are essentially nonmaneuverable and may block a narrow river section forcing other watercraft to wait to pass. The area most heavily used at present is outside the park boundary above and below Van Buren, where larger boats frequently operate. The subsequent safety problem has drawn many comments and complaints. The Big Spring canoe access has become much more congested with large numbers of tubers being picked up at that point. Based on the number of citations issued by law enforcement officers, littering is also more prevalent among tubers, since a workable means of proper disposal is generally not being used.

River access location, development, and size has, to a large extent, determined the amount of use and popularity of the various river zones. The existing accesses each have a limited capacity to meet needs for putting-in or taking-out watercraft, camping, swimming, tubing or other river use activities. Congestion and other problems have occurred at many of the accesses. It is recognized that additional planning and development will be necessary to improve the accesses required to accommodate planned recreational use of the river resource and reduce potential resource impacts as well.

BASIC MANAGEMENT GOALS

OZARK RIVERWAYS

The basic goals of the River Use Management Plan are:

1. Effective management of the river resources and visitor use;

2. Preservation of free-flowing streams of very high water quality;

3. Maintenance of the natural and pastoral river scenes;

4. Availability of a spectrum of high quality recreational experiences compatible with one another and the river resources.

5. Reduction of any adverse effects of visitor use and development.

To accomplish these goals, the River Use Management Plan proposes to:

1. Designate levels of use on different river sections and implement canoe use allocations which will minimize congestion on the river corridor and at accesses and provide visitors a choice of recreation densities.

2. Provide for monitoring and review of concession operations to determine need for further ajustments of commercial use as necessary.

3. Designate zones of motorboat operation and maximum horsepower size that will increase safety, reduce conflicts and provide maximum recreational benefits to all river users.

4. Continue to provide for gravel bar and riverbank camping that will satisfy user needs while having minimal impact on the resource.

5. Encourage sanitation and litter controls that will maintain the high qualities of the river and landscape.

6. Provide the widest range and highest quality of recreational activities which are consistent with the purpose of the Riverways and which can be accommodated without undue impact.

7. Provide appropriate accesses to the rivers to accommodate planned use while giving full consideration to resource impacts and other conflicts.

8. Monitor impacts on water quality, vegetation and other riverine resources, and conduct surveys of visitor reactions, preferences and use patterns to determine the need for adjustments in management strategies.

The Current River country has some of the most beautiful scenery in the eastern half of the United States. The scenery and other natural and historical features of Ozark National Scenic Riverways should be preserved and maintained not only for the enjoyment of today's visitors but also the generations to come. River management should provide opportunities for the visitor to share activity or discovery with others or in relative solitude where the emphasis is on experiencing, in close contact, these high quality resources. Recreation activities will be managed to preserve this high quality in both the visitor experience and the resource and to provide visitors with a choice of resource-related recreational opportunities.

Visitor use can be managed in a number of ways such as: (1) allowing use to rise to the maximum extent possible, (2) restricting use to a "wilderness experience" at all times, or (3) combinations in between. Excessively large numbers of people and resultant crowding will cause environmental damage, increase accidents on the river, diminish opportunities for visitors to enjoy the unique beauty of the river valley, and ultimately destroy the very qualities which Ozark National Scenic Riverways was established to protect. Such high densities might be appropriate and acceptable in urban recreational settings, but not at Ozark National Scenic Riverways.

Conversely, it is not realistic to attempt to provide a pure wilderness experience for floaters. As concluded in the riverways General Management Plan, factors not under the National Park Service's control such as the existing developments along much of the river, the narrowness of the park's land base, road and utility accesses and crossings, and other established uses recommend against the formal designation of wilderness in the riverways, and these same factors preclude a true wilderness float experience.

It is realistic to plan for a solitary or remote area experience for floaters. By choosing the right section of the river, the right day or time of day, the right season and combinations of these factors, visitors can enjoy the river virtually all to themselves. The National Park Service intends to manage the river in such a way that a spectrum of floating experiences are available for the visitor who will make advance plans. Even on those sections of the river with moderate or high use, floaters and fishermen seeking this kind of experience can use these sections frequently in the fall and winter and on weekdays in the spring and summer.

The National Park Service will manage Ozark National Scenic Riverways, not for the lowest common denominator, but for a variety of well defined, high quality visitor experiences compatable with the outstanding resources. Visitors are encouraged to experience the river directly: canoeing, camping, fishing, swimming, motorboating, studying aquatic nature, sunbathing, wading, or just sitting and watching.

OZARK RIVERWAYS

THE PLAN

CANOE USE

The majority of respondents to the draft proposal supported the concept of a reduction in canoe density levels on the rivers.

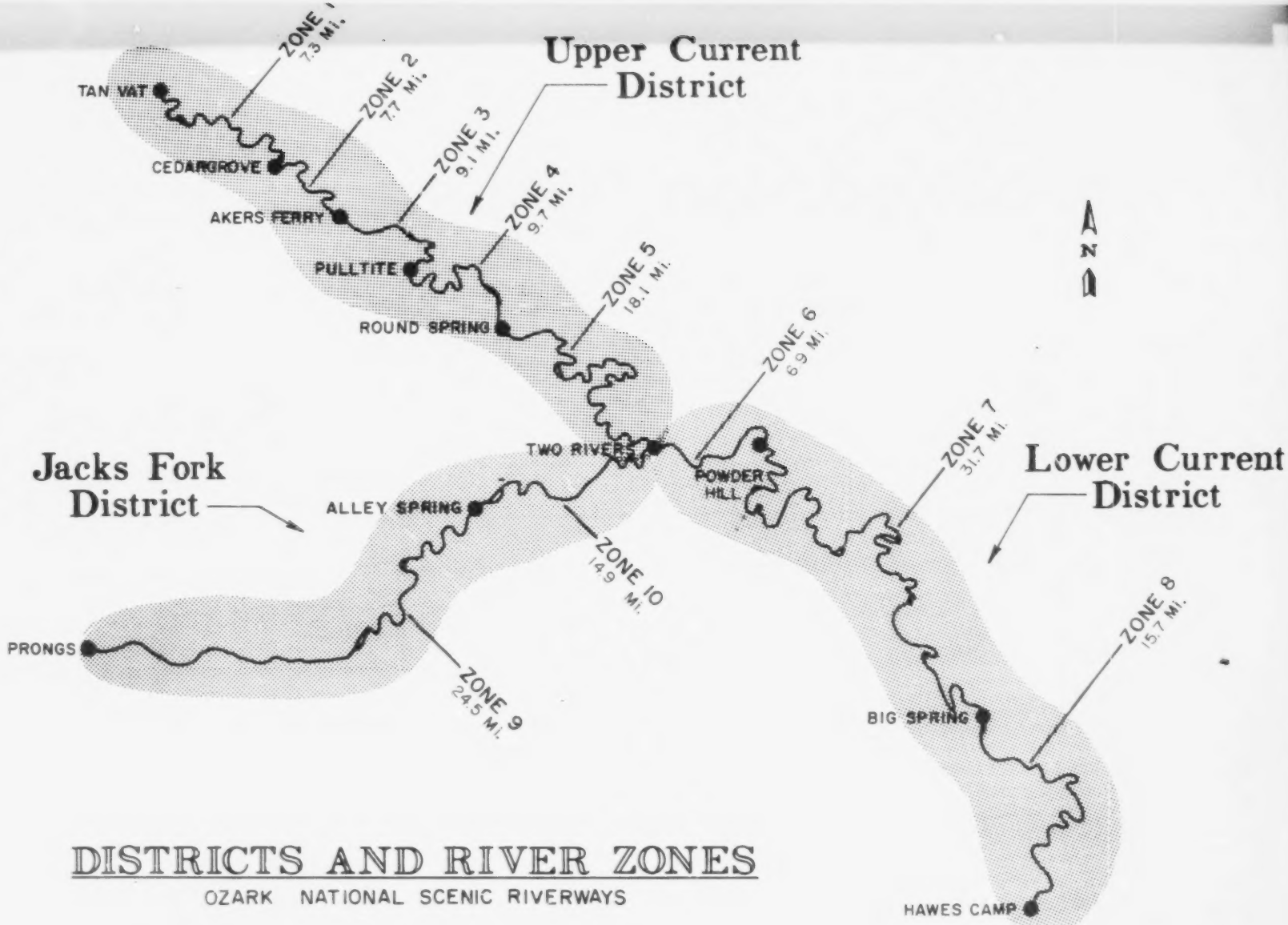
In order to protect the river environment and provide a variety of quality recreational experiences for visitors, maximum levels of canoe use have been established for each river zone on weekends (Friday, Saturday, and Sunday) and holidays and weekdays. Visitors will be provided with the opportunity for a variety of floating experiences:

Low use (up to 10 canoes per mile). A solitary environment with limited development and low visitation.

Medium use (between 11 and 40 canoes per mile). An outdoor setting with limited to moderate development and moderate visitation.

High use (between 41 and 70 canoes per mile). A social park setting with moderate to high development and visitation.

For the purpose of implementing the plan, the Current and Jacks Fork Rivers have been divided into the 10 zones used in the river recreation research program (Figure 1). The maximum levels of use by zone are listed in Table 2 and shown graphically in Figures 2 and 3.



DISTRICTS AND RIVER ZONES

OZARK NATIONAL SCENIC RIVERWAYS

Figure 1

Fig2:MaxWeekdayCanoeUse/Zone

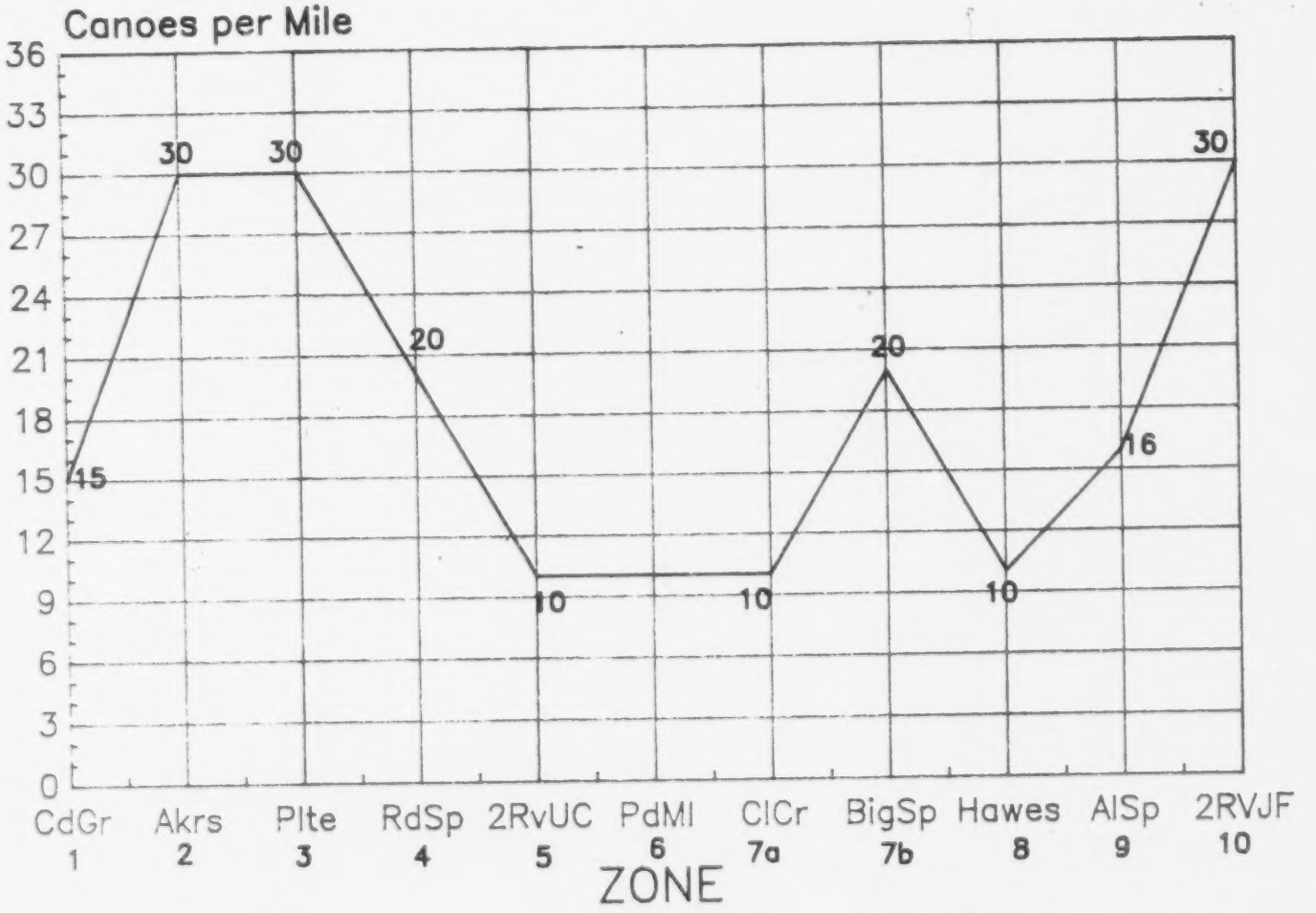


Fig3:MaxWeekend&HolidayCanoeUse

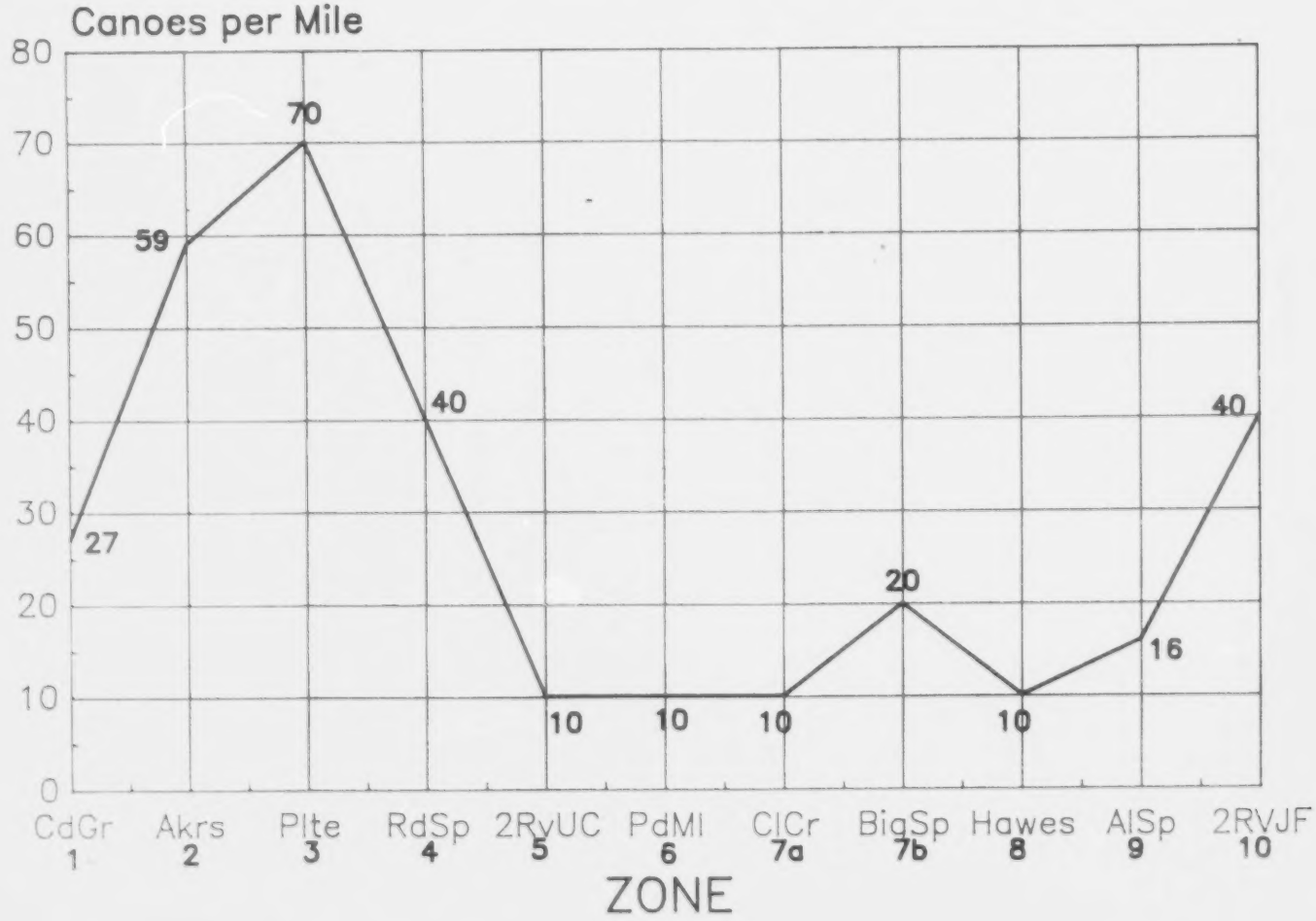


Table 2

Maximum Levels of Use

District River Zone	Weekends/Holidays Fri., Sat., Sun.	Weekday Mon.-Thurs.
Upper Current		
1. Tan Vat - Cedargrove	Medium	Medium
2. Cedargove - Akers	High	Medium
3. Akers - Pulltite	High	Medium
4. Pulltite - Round Spring	Medium	Medium
5. Round Spring - Two Rivers	Low	Low
Lower Current		
6. Two Rivers - Powder Mill	Low	Low
7a. Powder Mill - Chilton Creek	Low	Low
7b. Chilton Creek - Big Spring	Medium	Medium
8. Big Spring - Hawes	Low	Low
Jacks Fork		
9. Prongs - Alley Spring	Medium	Medium
10. Alley Spring - Two Rivers	Medium	Medium

From these maximum levels of use, the number of canoes to be permitted on a given zone of the river on a given day can be calculated by multiplying the maximum number of canoes per mile by the number of river miles in that zone. For example, zone 1 (Tan Vat - Cedargrove) is 7.3 miles long and the maximum proposed use level for weekends or holidays is 27 canoes per mile then the daily maximum number of canoes permitted would be 197.

The maximum use in daily numbers of canoes for the designated zones are:

Table 3
Maximum Canoe Use

District / Zone	River Miles	Weekends-Holidays (1)* Density	Weekends-Holidays (2) Maximum	Weekday (1)* Density	Weekday (2) Maximum
Upper Current					
1. Tan Vat - Cedargrove	7.3	27	197	15	110
2. Cedargrove - Akers	7.7	59	454	30	231
3. Akers - Pulltite	9.1	70	637	30	273
4. Pulltite - Round Spring	9.7	40	388	20	194
5. Round Spring - Two Rivers	18.1	10	180	10	180
Lower Current					
6. Two Rivers - Powder Mill	6.9	10	69	10	69
7a. Powder Mill - Chilton Creek	19.8	10	198	10	198
7b. Chilton Creek - Big Spring	11.9	20	238	20	238
8. Big Spring - Hawes	15.7	10	157	10	157
Jacks Fork					
9. Prongs - Alley Spring	24.5	16	392	16	392
10. Alley Spring - Two Rivers	14.9	40	596	30	447

(1) Number of canoes per mile
(2) Maximum level of canoes per zone per day

*Densities are based on research data resulting from river use and perceptions of crowding studies carried out since 1972.

Using the highest day of recorded use in each zone as a measure, recorded use levels in 1984 were within the maximum levels allowed in this plan except for Zone 1 (Tan Vat - Cedargrove) and Zone 2 (Cedargrove - Akers) on weekends, where the maximum use level was exceeded, and Zone 3 (Akers - Pulltite) where the 1984 peak day use was at the maximum level. Canoe densities will be reduced in Zones 1 and 2 to achieve the desired use levels by adjusting canoe numbers and phasing in the changes through the concession management program.

The goal in establishing zone maximum use levels is to reduce crowding and conflicts that have occurred on some weekends in certain locations during the summer season. Sixty-five percent of the canoe use at the Riverways occurs on weekends or holidays between Memorial Day and Labor Day. This relationship has been consistent since river use surveys began in 1972.

Conversely, weekday and off-season (spring, winter and fall) use has typically been below the use densities called for in this plan and could accommodate displacement of weekend or summer use should this occur as a result of implementing the measures to assure maximum use levels are not exceeded during those peak use periods.

Managing Canoe Use

Effectively managing canoe use within the established maximum use levels will include the following actions:

Information. The public will be informed about recreational opportunities available on the various river zones during the different seasons through pamphlets, concessioners, information stations, signs, interpretive programs, and publicity in newspapers and magazines and on radio and television.

Development. As identified in the General Management Plan, access areas, access roads, camping areas, and related facilities will be planned, improved, reduced if necessary, and managed as necessary to accommodate implementation of this plan.

Regulations. Enforcement of park regulations will continue and, if possible, be increased, to reduce illegal activities and conflicts among users.

Monitoring of Environmental Impacts and Visitor Experiences. Impacts on the river environment will continue to be monitored, and surveys of visitor use patterns and visitor reactions and preferences will continue to be conducted. Adjustments in management strategies to mitigate environmental impacts or changing visitor needs and desires identified through these surveys will be implemented as needed following completion of any necessary planning, compliance, and public notification requirements.

Concession Allocations. Over 85 percent of the canoeists who float the rivers rent canoes from concessioners, and the most effective method of controlling canoe use is to limit the number and distribution of canoes to each concessioner by zones and districts as has been the practice in recent years. All satisfactory canoe

concession permits and contracts were renewed prior to the 1986 operating season. Authorized canoe numbers will be allocated by district as follows: Upper Current 1240, Lower Current 400, and Jacks Fork 670.

This policy will be continued as the primary method of controlling canoe use and distribution. In addition, a portion of each maximum use quota has been allocated to private canoes based on monitoring survey results. Concessioners will be authorized specific put-in and take-out points within their respective districts as specified by the NPS, except that no restrictions will apply to canoes rented for trips of 3 days or longer.

Operators in the Jacks Fork River District will be restricted to put-in and take-out sites within all in-park sections of the Jacks Fork River and that section of the Current River between Round Spring and Logyard, except when renting canoes for trips of 3 days or longer. In addition, Jacks Fork District canoes putting in at Pulltite for 2-day trips from Monday through Friday will not be subject to these restrictions.

Operators in the Upper Current River District will be restricted to put-in and take-out sites within that section of the Current River from Montauk to Two Rivers, again except for canoes rented for trips of 3 days or longer.

Operators in the Lower Current River District will be restricted to put-in and take-out sites within that section of the Current River from Two Rivers to the Ripley County line, except for trips of 3 days or longer.

Strategies for Limiting Use

When it is determined that current or future levels of use of a river zone are

adversely affecting the environment or the quality of the recreational experience, or if the maximum use level is exceeded repeatedly, other strategies for limiting use will be implemented. Possible actions include, but are not limited to, the following:

1. Require concessioners to distribute their put-ins to more than one location. For example, on a given day a certain percentage of their canoes would launch at one access point and the remainder at other access points.

2. Require concessioners to stagger put-in times at certain locations.

3. Require a permit system for private floaters.

MOTORBOAT USE

Motorboat use was the most controversial issue addressed in the draft plan and as a result, generated the greatest number of comments. Responses covered the entire range of alternatives from no regulation to total elimination of motorboats. Many other respondents proposed some form of regulation in between the two extremes.

In order to resolve user conflicts, protect the quality of the river environment and the recreational experience, and address visitor safety concerns, regulations will be implemented to limit the use of motorized watercraft as follows:

25 hp maximum above Round Spring on the Current River and above Alley Spring on the Jacks Fork River, except, (a) 10 hp maximum above Akers Ferry on the Current River from May 1 to September 15 and (b) 10 hp maximum above Bay Creek on the Jacks Fork River from March 1 to the Saturday before Memorial Day. 40 hp maximum above the Big Spring landing on the Current River and below Alley Spring on the Jacks Fork River.

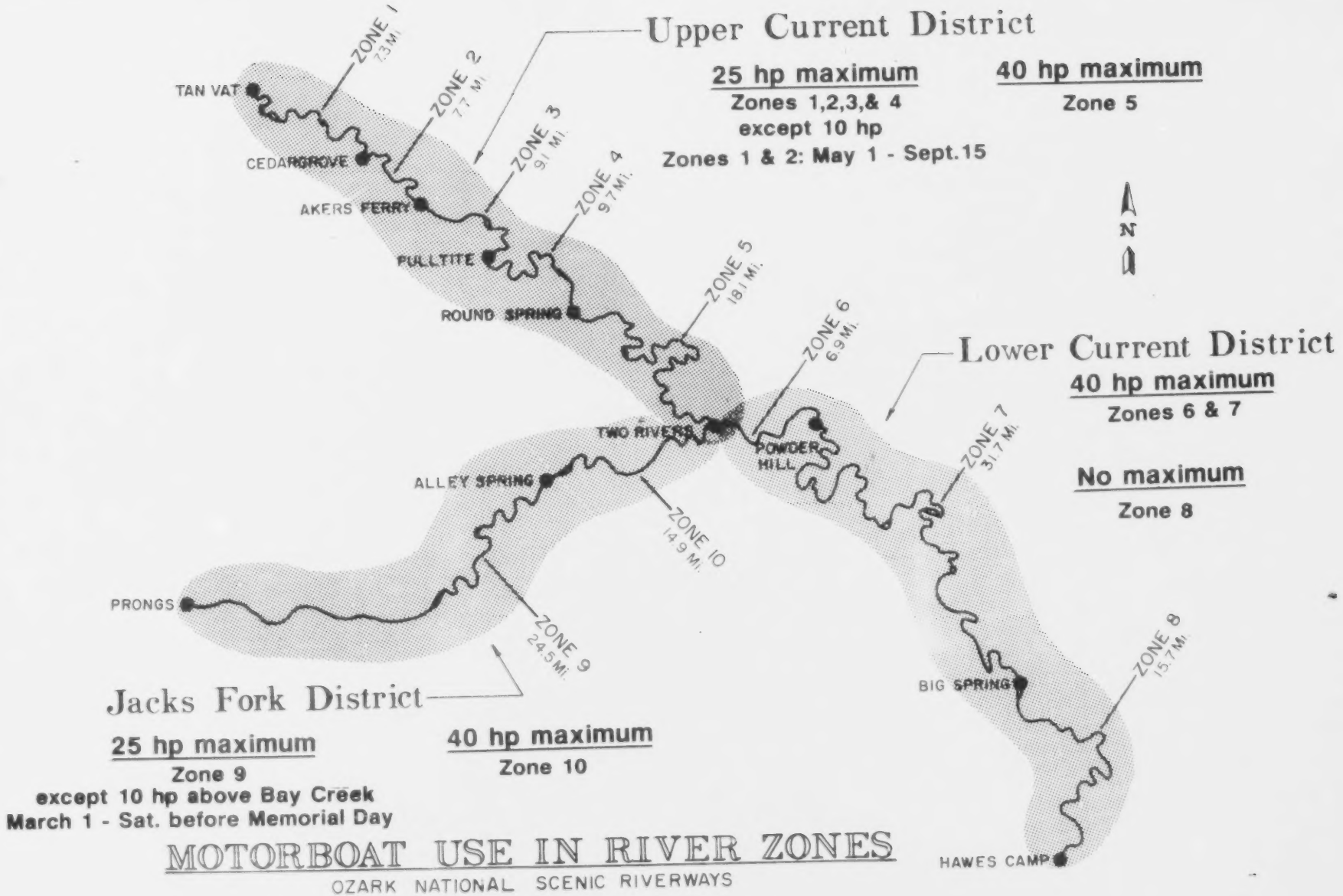
In all cases, only single outboard motors are allowed and horsepower is measured as power output at the propeller shaft. Promulgation of the regulations will begin immediately with the regulations to go into effect October 1, 1993. All official watercraft used for patrol, search and rescue, and other emergency and/or administrative operation will be exempt from horsepower limitations.

(Note: The National Park Service equips patrol boats with 25 hp motors and rescue boats with 40 HP motors.)

Changes were made from the draft plan to allow upriver access by all single outboard motor boaters to the Big Spring landing, to allow upriver access by 40 hp

motors to Round Spring and Alley Springs, to allow traditional fishing use throughout the season on the upper reaches of the Current and Jacks Fork Rivers, and to allow a longer amortization period for the owners of motors that will be restricted.

In addition, enforcement of both Federal and Missouri State boating regulations will continue.



MOTORBOAT USE IN RIVER ZONES

OZARK NATIONAL SCENIC RIVERWAYS

Figure 4

CAMPING

Provision for a variety of camping experiences is compatible with the management goal of making available a variety of recreational experiences for the visitor. Camping opportunities should also be of high quality and have minimal impact on the resource.

Three basic kinds of camping experiences will be offered:

1. Gravel Bar and Riverbank Camping. By camping on gravel bars and riverbanks, the visitor can enjoy a solitary experience except during peak canoeing and boating hours. Lack of facilities and services, including visitor protection, is characteristic with this kind of camping.

2. Primitive Camping. The General Management Plan identifies more than 40 sites in this category. Facilities are minimal and vary from site to site. Use of these areas is quite variable depending upon time and location.

3. Developed Camping. Developed areas such as Alley, Big, and Round Spring have extensive facilities and services, interpretive programs and a high level of use and interaction between campers.

There are advantages to both the visitor and park management in having designated campsites, whether they are primitive or developed. Visitor safety and protection, resource protection and facilities can be more easily provided at designated areas. Despite the advantages of designated camping areas, prohibiting camping at primitive sites and or gravel bars is not in keeping with the goal of providing a variety of recreational opportunities.

Based on complaints of crowding, observed resource degradation and increasing maintenance requirements, it is also apparent that it will be necessary to more intensively manage this form of camping in the future. Monitoring studies of the nature and extent of this use and a parkwide Road and Trail study are underway to provide the information needed to develop management procedures. When completed and approved, Road and Trail Study proposals for manageing access to riverside primitive camping locations will supercede procedures from the General Management plan and the River Use Management plan. In the meantime, existing camping opportunities will be continued for park visitors.

SANITATION AND LITTER

Sanitation and litter problems have increased in proportion to increases in river use. Various steps have been taken toward remedying the problem; however, these have not been completely successful in eliminating it in spite of the significant amount of maintenance, enforcement, and funding committed to it. In addition to the reductions in use densities detailed elsewhere in this plan, the following measures will be implemented to respond to the problem:

1. Floater Litter Bags. All canoes will be required to have a litter bag attached when on the rivers. Bags will be made available through concessioners and other sources; however, it will be the responsibility of the visitor/user to comply.

2. Enforcement. Maintain the maximum enforcement effort possible and support increased penalties for violations of regulations.

3. Facilities. Within capabilities and recognized needs, facilities such as comfort stations, trash receptacles, and other appropriate devices will be used to improve existing conditions.

4. Private Support. Promote and seek out private sector support for litter control practices and programs.

5. Education and Information. Increase efforts to educate and inform visitors about sanitation problems and practices, litter awareness, regulations and river ethics by utilizing a variety of media.

6. Glass Containers. Prohibit the possession or use of glass containers in or upon the rivers.

7. Volunteer Assistance. Promote and support volunteer assistance for litter removal and awareness programs.

RECREATIONAL OPPORTUNITIES

Ozark National Scenic Riverways serves people of many ages, backgrounds, interests and needs. It follows that a variety of recreational opportunities are needed to serve the visitor. Due to increasing numbers of people seeking this variety of pleasurable recreation, competition has increased to the detriment of many of the visitors. The challenge to management is to establish a program that makes available a wide variety of recreational experiences, in balance with needs and resource considerations, so that each visitor has the opportunity to pursue his interests and satisfy his needs. Provisions in this plan are directed to this end. Other measures not addressed elsewhere in the plan include:

1. Hiking Trails. The need for additional hiking trails has been identified through research studies and the planning process. A roads and trails study is underway to address this need.

2. Fishing. Enhancement of fishing opportunities was identified as a continuing need and will be addressed in the future as it has within this plan.

3. Tubing. This river use activity has increased significantly in some areas in recent years. Comments and complaints received indicate that this has created some conflicts. No limits have been placed on the number of tubes available for rent by the licensed operators at present; however, it may be necessary to regulate this activity in the future to resolve conflicts and visitor safety concerns.

4. Caving. Many caves are located adjacent to the river corridor and are visited often by river users. Enhancement of recreational caving and cave protection have been identified as needs and will be addressed in a Cave Management Plan in the near future.

5. Hunting. Opportunities will be continued and encouraged in concert with other uses. Habitat management activities will be continued to support wildlife populations.

6. Trapping. Trapping will continue within the riverways in compliance witht he U.S. District Court permanent injunction.

7. Other Recognized activities such as swimming, skin diving, nature study, sightseeing and picnicking that are enjoyed by many visitors will be given full consideration in the management of river recreational use.

RIVER ACCESSES

Access to the rivers for recreational activity usually occurs at terminations or crossings of improved or unimproved roads. Some of these sites provide appropriate opportunities for a variety of recreational activities but others may not adequately serve visitor needs for one reason or another.

The major accesses which are needed to carry out the provisions of this plan are identified in Table 3. Other sites regularly used for river access are Jerktail, Rocky Creek, and Hickory Landing on the Current River and Buck Hollow, Blue Spring, Bay Creek, and Shawnee Creek on the Jacks Fork River.

Additional minor accesses occur throughout the riverways and are utilized to a lesser extent by other river users. These accesses, as well as those listed above, will be carefully reviewed in the Roads and Trails Study which is underway. Numerous public comments supported an evaluation of existing accesses with regard to how many of what type are needed to support river use activities.

It is clear that improvement of some accesses is needed to meet the goals and objectives of the river use plan. All accesses will be reviewed individually and designs will be prepared to correct deficiencies and to provide for the facilities consistent with the needs at each location. Those accesses in greatest need of attention would appear to be Cedar Grove, Two Rivers, Chilton Creek, and Big Spring on the Current River and Buck Hollow on the Jacks Fork.

MONITORING

The monitoring program is the primary method for evaluating the degree which the objectives of the River Use Management Plan are met. Existing monitoring programs are described in the park's Resources Management Plan (RMP) RMP project statements addressing both to river use and the impacts of river uses such as canoeing, tubing, and motorboating will be revised and restructured as needed to accurately describe present and future monitoring and study needs. Monitoring will be designed to identify degradation of the resource or quality of the visitor experience below acceptable levels and to improve knowledge in areas where existing nformation is considered inadequate. Monitoring will also be capable of scientifically assessing the degree of impact to provide a basis for recommending plan modifications or revisions.

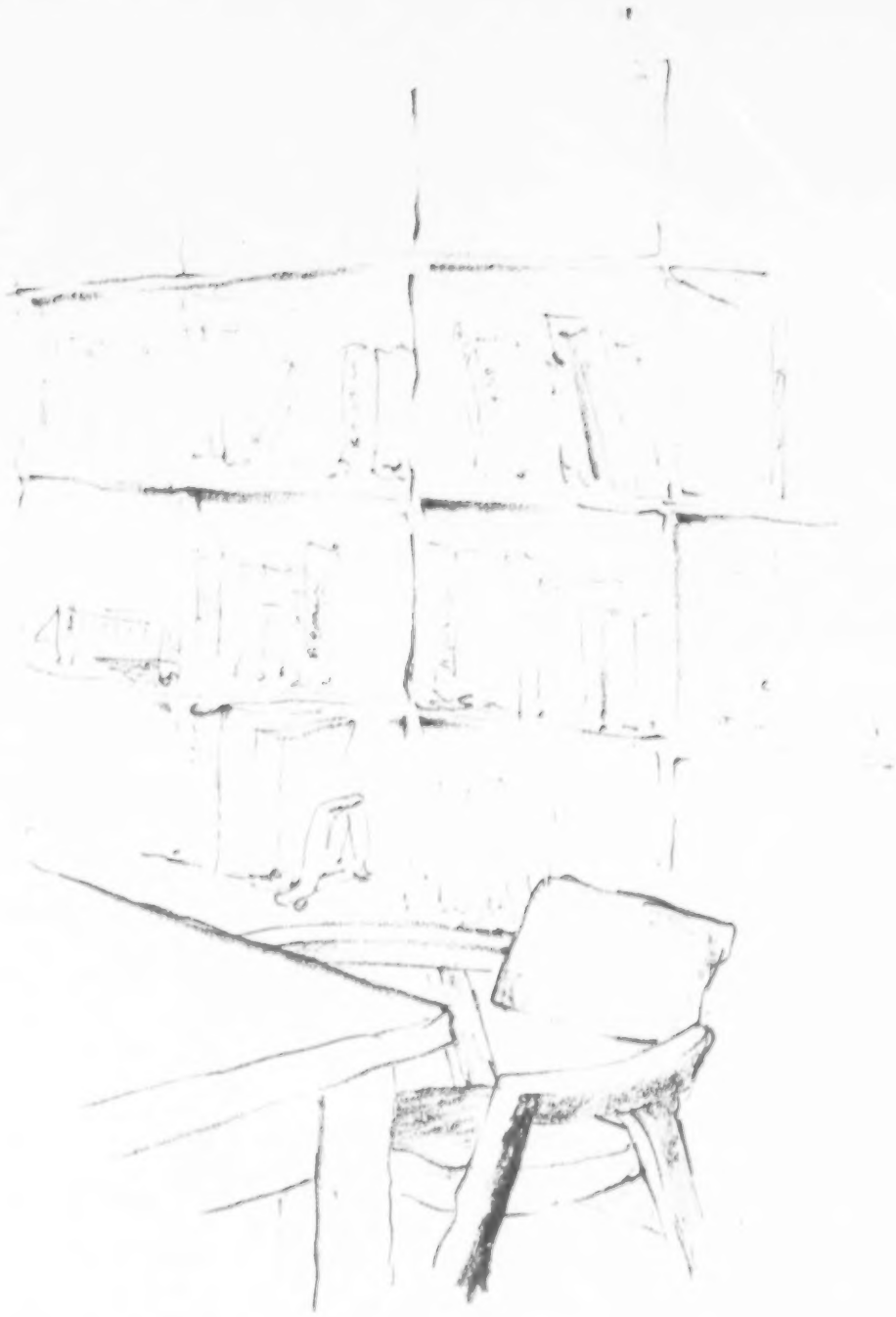
Monitoring will focus on assessing impacts on the environment, impacts on the visitor experience, and other aspects of the plan. Specific elements of the monitoring program will include: soils and vegetation, water quality, visitor experiences and perceptions, noise, use densities, wildlife and river ecosystem components.

The majority of impacts occur at developed or attraction sites such as campgrounds, accesses, springs, tributary streams, caves and campsites. Some of these impacts are short-term, some are long-term and others can be permanent. For example, vegetation damage at campsites is generally short-term while damage to cave formations are essentially permanent. Mitigation and management priorities would be based on the severity, nature and permanancy of the documented impacts.

PLAN REVIEW AND REVISION

The National Park Service will review and analyze the information from the ongoing monitoring program continuously. Based on this information and appropriate management guidelines, the plan will be updated or modified as necessary to fulfill the stated goals and objectives. Updating and/or modification could include adjustments in use levels, temporary closures to protect or restore resources, changing launch schedules and other management actions designed to minimize impact.

If either the proposed management actions or plan modifications needed are considered significant, appropriate planning and compliance will be undertaken and the proposed revisions will be provided to the public for review and comment. Following this review and consideration of the public comments, the necessary plan modifications will be made and distributed to all interested parties.



OZARK RIVERWAYS

APPENDICES

APPENDIX A

ENVIRONMENTAL ASSESSEMENT

Natural Resources

Temporary loss of vegetative cover and diversity, soil compaction, and erosion of streambanks in localized, heavily used areas would continue; however, impacts are acceptable at current levels, and could actually decrease parkwide due to redistribution of use. Trash and litter will increase or decrease relative to proposed zone use levels but will remain essentially unchanged parkwide. Steps are being taken to protect endangered bat species and other known endangered or threatened species would not be affected. Human activity would continue to disturb some animals. Water quality is presently good and standards contained in 10CSR 20-7.031, State of Missouri, will not be exceeded. Cave resources near the river in high use zones will require continued protection. The quality of fishing would remain at current levels in unaltered zones and may be enhanced in zones of controlled use.

Park Facilities

Some crowding would continue to occur at popular access sites and camping areas but decrease at others. Sanitation and litter problems will remain at present levels but could be decreased by the proposed actions. Camping would be monitored to determine future needs and/or restrictions. Effects on road maintenance would be minimal.

Concessions

Given the present number of concession canoes, opportunities for renting more canoes are possible in all districts. Possible restrictions on concession use of access points or staggering of put-in times on peak use days will inconvenience scheduling but should have minimal economic impact.

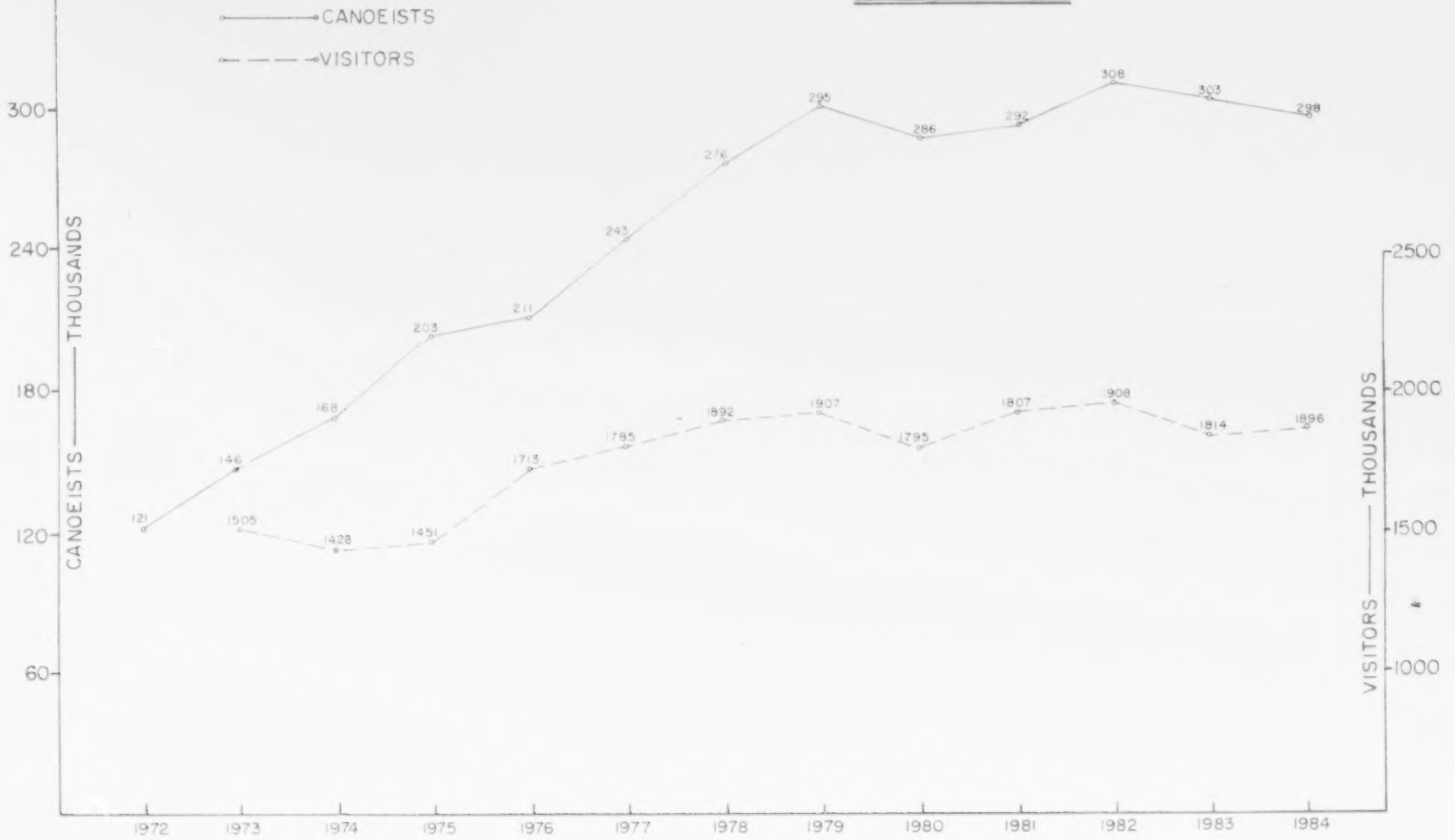
Visitor Use

A wider range of floater density levels will be provided to visitors. Conflicts, crowding, and congestion will be reduced for all types of river users along with safety hazards associated with high use on some river zones. Some crowding and congestion will continue periodically at the more popular canoe access sites and camping areas but should decline in frequency parkwide. Some visitor inconvenience will result when scheduling of access use and departure times becomes necessary. The choices of motorboat users would be restricted by area and size of outboard motor.

NPS Management

The proposed actions would require an increase in supervision and monitoring of recreation use for program continuity. New regulations would be needed to enforce the provisions of the plan. An enhanced public information program would be needed to inform park users of opportunities, restrictions, and other changes in the river-use program. Other functions would remain essentially unchanged.

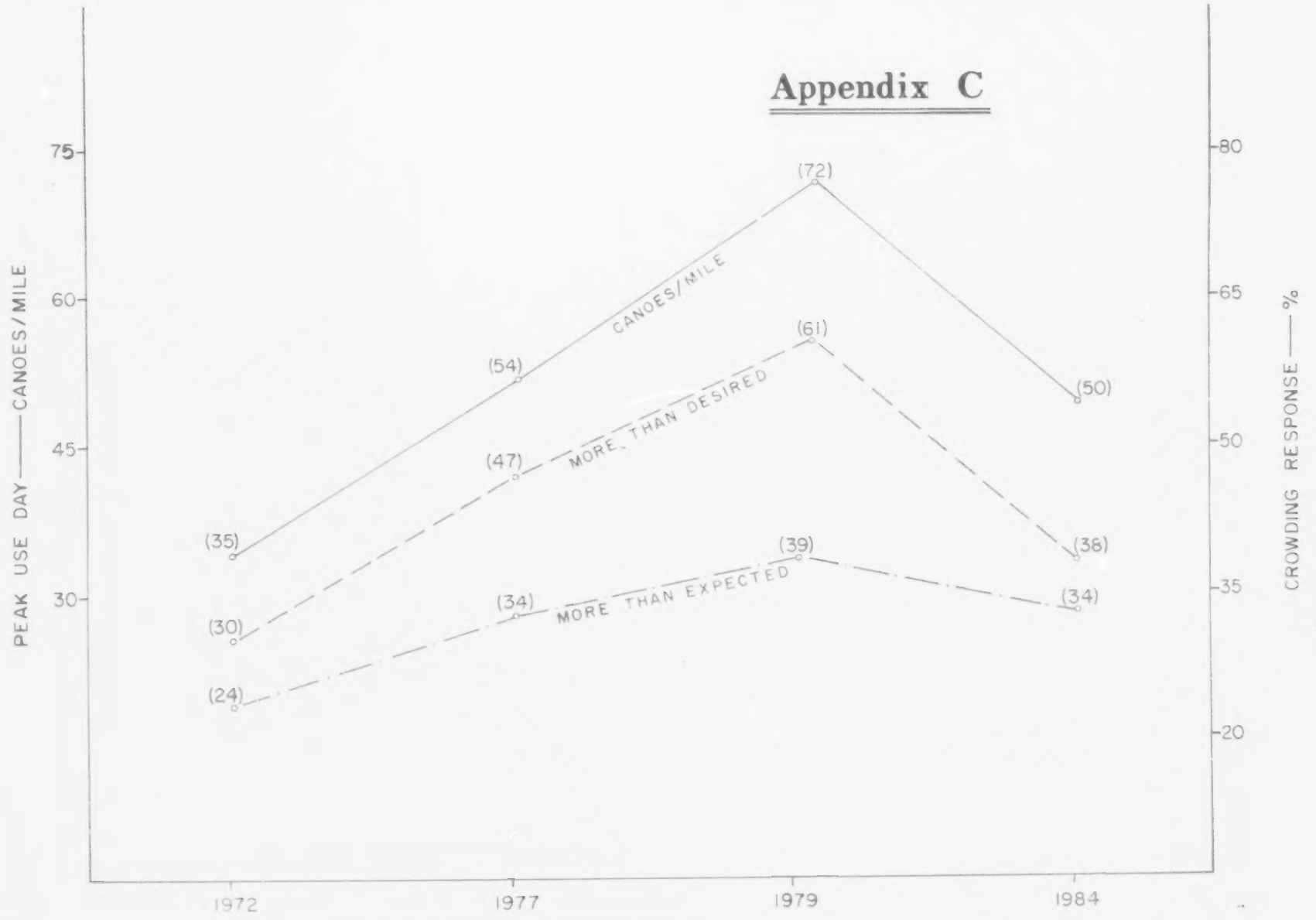
Appendix B



NUMBERS of VISITORS and CANOEISTS, OZARK NSR, 1972—1984

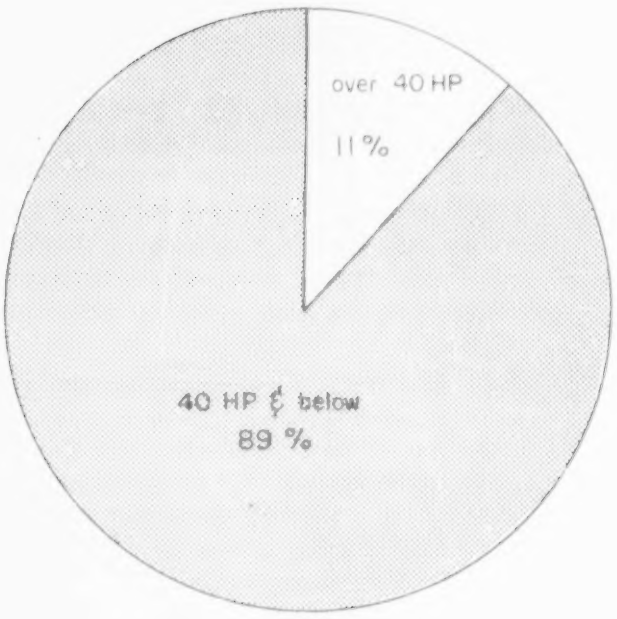
Revised & updated 9/84,9/85

Appendix C

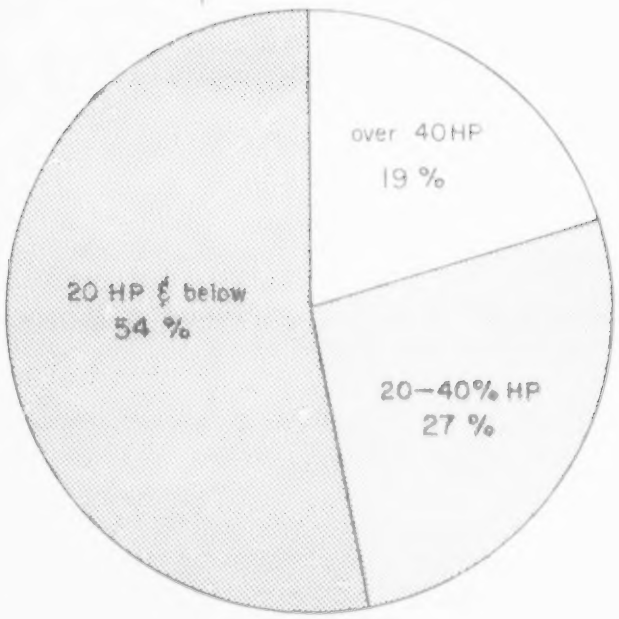


CROWDING PERCEPTIONS and CANOE DENSITIES — UPPER CURRENT

Appendix D



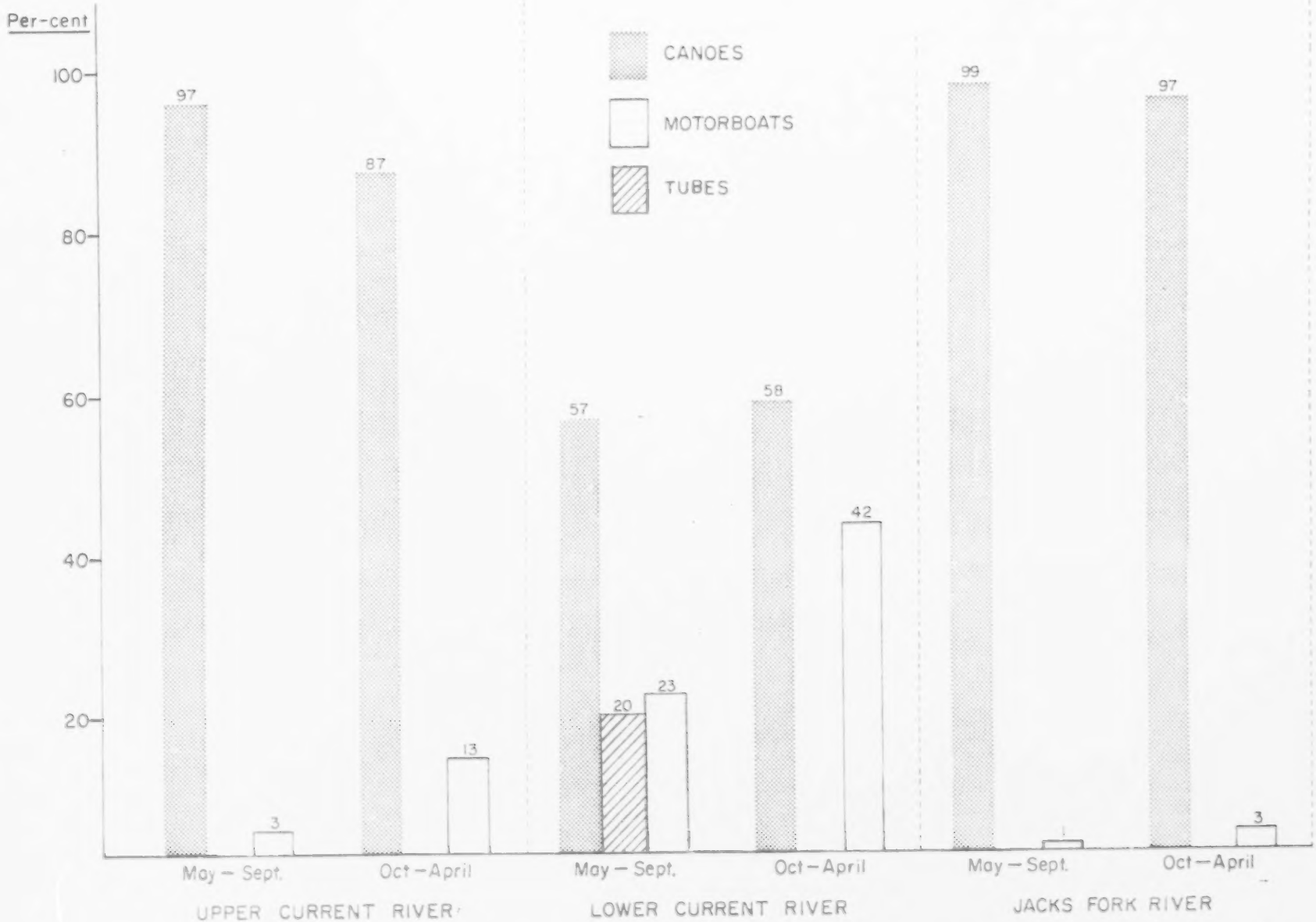
1981



1984

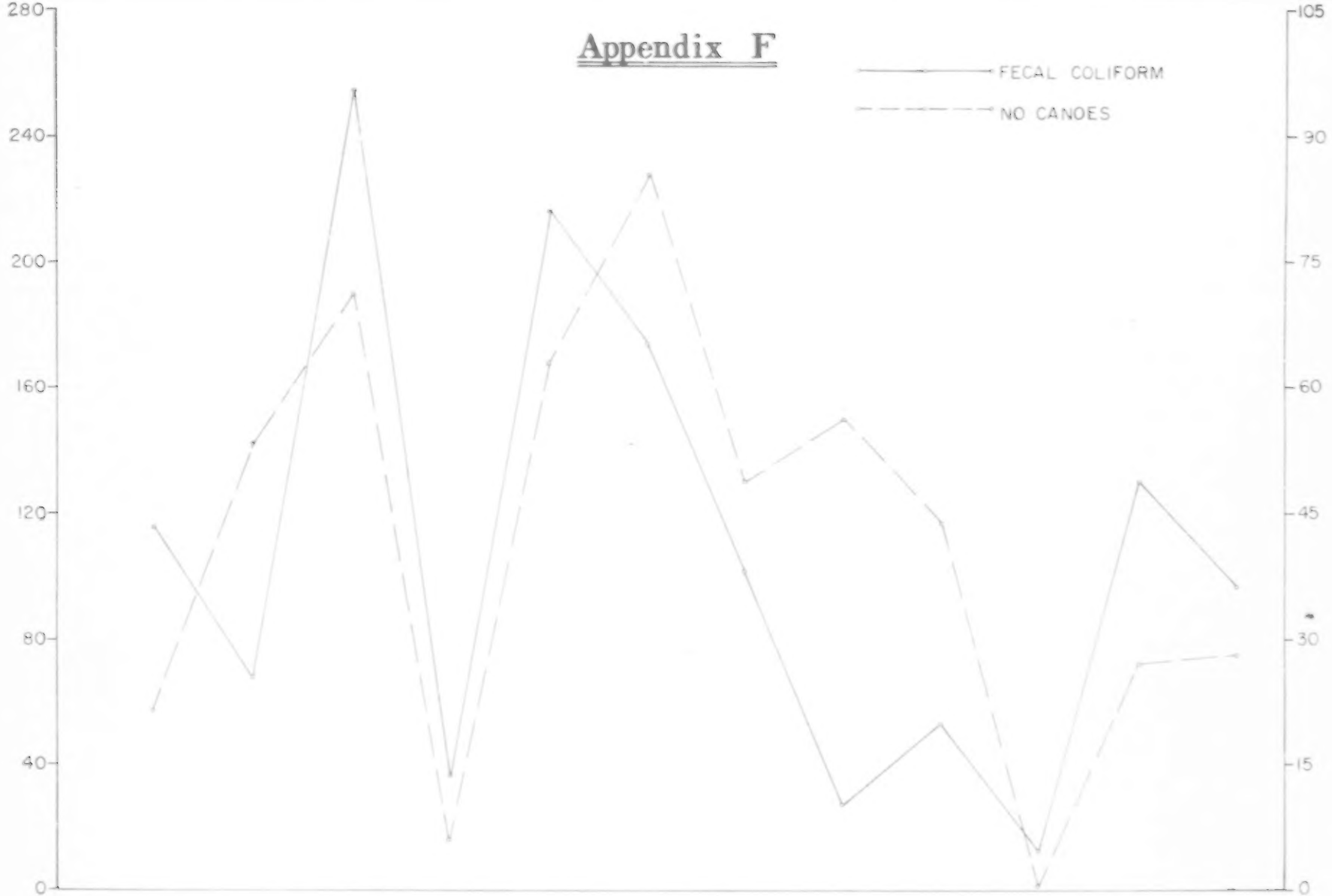
OUTBOARD MOTOR REGISTRATION by HORSEPOWER CATEGORY
for
CARTER, SHANNON and REYNOLDS COUNTIES, MISSOURI
1981 & 1984

Appendix E



COMPOSITION OF RIVER USE BY DISTRICT and SEASON-OZARK NATIONAL SCENIC RIVERWAYS, 1980

Appendix F



FLOATER USE and BACTERIA LEVELS–CURRENT RIVER, ROUND SPRING
JULY–SEPT., 1980

LIST OF PREPARERS

This plan was prepared by:

NPS Team (Ozark Riverways-Midwest Regional Office)

Arthur E. Sullivan, Superintendent

David I. Foster, Team Captain; Biologist

David Given, Midwest Regional Office

Dean C. Einwalter, Management Assistant

Tom Graham, Chief, Resources Management & Visitor Protection

Jim Simpson, Resources Management Specialist

Consultants

*Dr. Kenneth Chilman, Southern Illinois University-Carbondale

*Dr. Alan Everson, University of Missouri-Columbia

*also serve as Team members

best copy available